

Serial No.: 10/849,266  
Art Unit: 2816

**REMARKS**

This is a full and timely response to the outstanding non-final Office Action mailed August 24, 2005. Reconsideration and allowance of the application and pending claims 1-7 and 14-24 are respectfully requested.

**I. Allowable Subject Matter**

Applicants appreciate the Examiner's indication that claims 5 and 16-17 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

In that it is believed that every rejection has been overcome, it is respectfully submitted that each of the claims that remains in the case is presently in condition for allowance.

**II. Election/Restrictions**

The Office Action has requested an affirmation of the election made without traverse by telephonic correspondence between the Examiner and Applicants' representative, Dave Rodack, on July 22, 2005. In response to this requirement, Applicants elect to prosecute claims corresponding to Group I (claims 1-7 and 14-24) without traverse, and acknowledge the Examiner's withdrawal from consideration claims 8-13 and 25-28.

Serial No.: 10/849,266  
Art Unit: 2816

### III. Claim Rejections - 35 U.S.C. § 102(b)

#### A. Statement of the Rejection

Claims 1-4, 6-7, 14-15, and 18-24 have been rejected under 35 U.S.C. § 102(b) as allegedly anticipated by *Fukuda* ("Fukuda," U.S. Pat. No. 5,831,483). Applicants respectfully traverse this rejection.

#### B. Discussion of the Rejection

It is axiomatic that "[a]nticipation requires the disclosure in a single prior art reference of each element of the claim under consideration." *W. L. Gore & Associates, Inc. v. Garlock, Inc.*, 721 F.2d 1540, 1554, 220 USPQ 303, 313 (Fed. Cir. 1983). Therefore, every claimed feature of the claimed invention must be represented in the applied reference to constitute a proper rejection under 35 U.S.C. § 102(b).

In the present case, not every feature of the claimed invention is represented in the *Fukuda* reference.

#### Independent Claim 1

Claim 1 recites (with emphasis added):

1. A method for operating a phase-locked loop (PLL), said method comprising:  
providing a control current; and  
*varying the control current in proportion to the inverse of N squared*, wherein *N* is a ratio of an output frequency of the PLL to a reference frequency of the PLL, wherein varying the control current compensates for bandwidth changes of the PLL.

Applicants respectfully submit that *Fukuda* does not disclose at least the above-emphasized features. The Office Action states the following on page 4, section 5:

Serial No.: 10/849,266  
Art Unit: 2816

...Fukuda discloses in Figure 1 a phase-locked loop comprising: a current generating device (5) configured to generate a control current; and a switching module (7) configured to vary the control current in proportion to the inverse of  $N$  squared, wherein  $N$  is a ratio of an output frequency ( $f_o$ ) of the PLL to a reference frequency ( $f_r$ ) of the PLL. This is seen to be true because by varying  $c_p$  the output frequency ( $f_o$ ) is changed which is related to the inverse of  $N$  squared, since  $N$  is related to the output frequency ( $f_o$ ).

Applicants respectfully disagree. It is well-known that  $N$  is proportional to the ratio of  $f_o/f_r$ . Given that relationship, it is inaccurate to say that the output frequency or even  $c_p$  is somehow related to the inverse of  $N$  squared. There is simply no support for that assertion. Thus, Applicants respectfully request that the rejection to independent claim 1 be withdrawn.

Because independent claim 1 is allowable over *Fukuda*, dependent claims 2-5 are allowable as a matter of law for at least the reason that the dependent claims 2-5 contain all elements of their respective base claim. See, e.g., *In re Fine*, 837 F.2d 1071 (Fed. Cir. 1988).

#### Independent Claim 6

Claim 6 recites (with emphasis added):

6. A method for operating a phase-locked loop (PLL), said method comprising:  
providing a detector; and  
*varying the gain of the detector in proportion to the inverse of  $N$  squared*, wherein  $N$  is a ratio of an output frequency of the PLL to a reference frequency of the PLL, wherein varying the gain of the detector compensates for bandwidth changes of the PLL.

For similar reasons discussed above in association with independent claim 1, Applicants respectfully submit that *Fukuda* fails to disclose at least the above-emphasized features, and thus respectfully request that the rejection to independent claim 6 be withdrawn.

Serial No.: 10/849,266  
Art Unit: 2816

Because independent claim 6 is allowable over *Fukuda*, dependent claim 7 is allowable as a matter of law.

#### **Independent Claim 14**

Claim 14 recites (with emphasis added):

14. A phase-locked loop (PLL), comprising:  
a current generating device configured to generate a control current; and  
*a switching module configured to vary the control current in proportion to the inverse of N squared*, wherein  $N$  is a ratio of an output frequency of the PLL to a reference frequency of the PLL.

For similar reasons discussed above in association with independent claim 1, Applicants respectfully submit that *Fukuda* fails to disclose at least the above-emphasized features, and thus respectfully request that the rejection to independent claim 14 be withdrawn.

Because independent claim 14 is allowable over *Fukuda*, dependent claims 15-20 are allowable as a matter of law.

#### **Independent Claim 21**

Claim 21 recites (with emphasis added):

21. A phase-locked loop (PLL), comprising:  
a detector; and  
*a switching module configured to vary the gain of the detector in proportion to the inverse of N squared*, wherein  $N$  is a ratio of an output frequency of the PLL to a reference frequency of the PLL.

For similar reasons discussed above in association with independent claim 1, Applicants respectfully submit that *Fukuda* fails to disclose at least the above-emphasized features, and thus respectfully request that the rejection to independent claim 21 be withdrawn.

Serial No.: 10/849,266  
Art Unit: 2816

Because independent claim 21 is allowable over *Fukuda*, dependent claims 22-24 are allowable as a matter of law.

Due to the shortcomings of the *Fukuda* reference described in the foregoing, Applicants respectfully assert that *Fukuda* does not anticipate Applicants' claims. Therefore, Applicants respectfully request that the rejection of these claims be withdrawn.

#### **IV. Claim Rejections - 35 U.S.C. § 102(e)**

##### **A. Statement of the Rejection**

Claims 1-2, 6-7, 14, 18, and 21-22 have been rejected under 35 U.S.C. § 102(e) as allegedly anticipated by *Davis et al.* ("Davis," U.S. Pat. No. 6,624,707). Applicants respectfully traverse this rejection.

##### **B. Discussion of the Rejection**

It is axiomatic that "[a]nticipation requires the disclosure in a single prior art reference of each element of the claim under consideration." *W. L. Gore & Associates, Inc. v. Garlock, Inc.*, 721 F.2d 1540, 1554, 220 USPQ 303, 313 (Fed. Cir. 1983). Therefore, every claimed feature of the claimed invention must be represented in the applied reference to constitute a proper rejection under 35 U.S.C. § 102(e).

In the present case, not every feature of the claimed invention is represented in the *Davis* reference.

Serial No.: 10/849,266  
Art Unit: 2816

### Independent Claim 1

Claim 1 recites (with emphasis added):

1. A method for operating a phase-locked loop (PLL), said method comprising:  
providing a control current; and  
*varying the control current in proportion to the inverse of N squared*, wherein N is a ratio of an output frequency of the PLL to a reference frequency of the PLL, wherein varying the control current compensates for bandwidth changes of the PLL.

Applicants respectfully submit that *Davis* does not disclose at least the above-emphasized features. The Office Action states the following on page 5, section 6:

...Davis discloses in Figure 3 a phase-locked loop comprising: a current generating device (16) configured to generate a control current (see column 4, lines 16-19); and a switching module (20) configured to vary the control current in proportion to the inverse of N squared, wherein N is a ratio of an output frequency (output of VCO 12) of the PLL to a reference frequency (17) of the PLL. This is seen to be true because by varying the tuning voltage (58) the output frequency is changed which is related to the inverse of N squared, since N is related to the output frequency.

Applicants respectfully disagree. It is well-known that N is proportional to the ratio of  $f_o/f_r$ . Given that relationship, it is inaccurate to say that the output frequency or tuning voltage is somehow related to the inverse of N squared. There is simply no support for that assertion. Thus, Applicants respectfully request that the rejection to independent claim 1 be withdrawn.

Because independent claim 1 is allowable over *Davis*, dependent claims 2-5 are allowable as a matter of law.

Serial No.: 10/849,266  
Art Unit: 2816

### Independent Claim 6

Claim 6 recites (with emphasis added):

6. A method for operating a phase-locked loop (PLL), said method comprising:

providing a detector; and  
*varying the gain of the detector in proportion to the inverse of N squared*, wherein  $N$  is a ratio of an output frequency of the PLL to a reference frequency of the PLL, wherein varying the gain of the detector compensates for bandwidth changes of the PLL.

For similar reasons discussed above in association with independent claim 1, Applicants respectfully submit that *Davis* fails to disclose at least the above-emphasized features, and thus respectfully request that the rejection to independent claim 6 be withdrawn.

Because independent claim 6 is allowable over *Davis*, dependent claim 7 is allowable as a matter of law.

### Independent Claim 14

Claim 14 recites (with emphasis added):

14. A phase-locked loop (PLL), comprising:  
a current generating device configured to generate a control current; and  
*a switching module configured to vary the control current in proportion to the inverse of N squared*, wherein  $N$  is a ratio of an output frequency of the PLL to a reference frequency of the PLL.

For similar reasons discussed above in association with independent claim 1, Applicants respectfully submit that *Davis* fails to disclose at least the above-emphasized features, and thus respectfully request that the rejection to independent claim 14 be withdrawn.

Because independent claim 14 is allowable over *Davis*, dependent claims 15-20 are allowable as a matter of law.

Serial No.: 10/849,266  
Art Unit: 2816

### **Independent Claim 21**

Claim 21 recites (with emphasis added):

21. A phase-locked loop (PLL), comprising:  
a detector; and  
*a switching module configured to vary the gain of the detector in proportion to the inverse of N squared*, wherein  $N$  is a ratio of an output frequency of the PLL to a reference frequency of the PLL.

For similar reasons discussed above in association with independent claim 1, Applicants respectfully submit that *Davis* fails to disclose at least the above-emphasized features, and thus respectfully request that the rejection to independent claim 21 be withdrawn.

Because independent claim 21 is allowable over *Davis*, dependent claims 22-24 are allowable as a matter of law.

Due to the shortcomings of the *Davis* reference described in the foregoing, Applicants respectfully assert that *Davis* does not anticipate Applicants' claims. Therefore, Applicants respectfully request that the rejection of these claims be withdrawn.

### **V. Claim Rejections - 35 U.S.C. § 103(a)**

#### **A. Rejection of Claims 20 and 24**

Claims 20 and 24 have been rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over *Fukuda*. Applicants respectfully traverse this rejection.

#### **B. Discussion of the Rejection**

As has been acknowledged by the Court of Appeals for the Federal Circuit, the U.S. Patent and Trademark Office ("USPTO") has the burden under section 103 to establish a

Serial No.: 10/849,266  
Art Unit: 2816

*prima facie* case of obviousness by showing some objective teaching in the prior art or generally available knowledge of one of ordinary skill in the art that would lead that individual to the claimed invention. *See In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988). The Manual of Patent Examining Procedure (MPEP) section 2143 discusses the requirements of a *prima facie* case for obviousness. That section provides as follows:

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teaching. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and reasonable expectation of success must be found in the prior art, and not based on applicant's disclosure.

In the present case, Applicants respectfully submit that a *prima facie* case for obviousness has not been established. The Office Action provides the following assertion on page 6, section 8:

...it would have been obvious to one skilled in the art at the time of the invention that all of those elements could have been disposed on a single chip for the advantage of saving space and thereby reducing costs.

Applicants disagree, and respectfully submit that simply stating in conclusory fashion that something is obvious ignores the requirements imposed on the Office to establish a *prima facie* case. In summary, it is Applicants' position that a *prima facie* for obviousness has not been made against Applicants' claims. Therefore, it is respectfully submitted that each of these claims is patentable over the art of record and that the rejection of these claims should be withdrawn.

Serial No.: 10/849,266  
Art Unit: 2816

CONCLUSION

Applicants respectfully submit that Applicants' pending claims are in condition for allowance. Favorable reconsideration and allowance of the present application and all pending claims are hereby courteously requested. If, in the opinion of the Examiner, a telephonic conference would expedite the examination of this matter, the Examiner is invited to call the undersigned attorney at (770) 933-9500.

Respectfully submitted,



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